

**Draft annotated outline for the Report of the Secretary-General  
for the 2013 Annual Ministerial Review of UN ECOSOC**

**ITU INPUT**

I. Introduction

There are many challenges to sustainable development, many of which derive from growth in the world population and the mismatch between the location, allocation and distribution of resources and the location of population centres. Science, technology and innovation (STI) – and broadband ICTs in particular – can be leveraged across different sectors to help speed up and resolve distribution systems by facilitating communications. They also enable the mapping and monitoring of resources (e.g. water levels and temperatures for drought, deforestation or crop yields) for more accurate, real-time planning and improved distribution of resources.

A fundamental issue persists as to how society can benefit from innovation, and how to reward the individual inventors/private sector firms who invented or developed useful technologies, as well as the speed of deployment of new technologies. Systems of intellectual property are just one answer. Depending on the upfront investments and lead-times for each technology, in some cases, the answer may be that Governments cannot hope to leverage new private sector players, as much innovation may remain proprietary (e.g. consider Monsanto's proprietary genetically modified technologies, Glaxo's grip on pharmaceuticals or the grip of Microsoft Office). Governments or development institutions may be able to provide centralized infrastructure or funding (e.g. capital or incubators) in the hope that STI solutions for development can be scaled up more broadly and more quickly (e.g. infoDev's mobile eLab for new and innovative mobile broadband apps in Kenya).

However, other times, technology itself may provide the answer – for example, the Internet provides one of the greatest platforms for open source innovation, crowdsourcing and cross-collaboration the world has ever known. Crowdsourcing may not always be scalable or sustainable, however, due to problems of free riders. Consider the repository of knowledge available to everyone through Wikipedia, which recently launched an appeal for funds to ensure it can continue to operate, as the positive externality of widely accessible knowledge it provides is accessible to all, without any need to contribute financially.



II. The nexus between science, technology and innovation (STI), and culture, the MDGs and sustainable development (Co-leader: UNESCO and UNDP/ Contributors: WIPO)



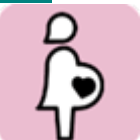



- A. Science base, technology, innovation and capacity building for sustainable development
  - a. Science-policy-society interface
  - b. STI education
  - c. Research, monitoring and observations

- d. Science diplomacy
  - e. Culture of science
  - f. Access, usage and application of technology information
  - g. STI policies
- B. Culture and the role of the creative sector in supporting sustainable development
- C. The changing geography and models of innovation
- a. New players in STI (BRICs, etc.)
  - b. Internationalization of R&D and innovation
  - c. New models of innovation (open innovation, networked innovation)
  - d. Sectoral distinctions (ICTs, green technologies, pharma and medical technologies)
- III. Shaping the course of development: the role of STI (Co-leader: UNCTAD (tbc) and UNESCO / Contributors: ITU, UNDP, WIPO, Division of Sustainable Development (DESA))
- A. Filling the MDGs Gap (Development Policy and Analysis Division (DESA))
- a. Mainstreaming STI to support achievement of the MDGs

There is a body of evidence for the ability of STI and broadband to facilitate achievement of the MDGs. Broadband communication technologies can do this by improving and facilitating communications, as well as enabling access to greater knowledge, information, networking, entrepreneurship and marketing opportunities. Using broadband technologies, entrepreneurs can access new markets, diversify and provide security over their sources of revenue. They can also fundamentally reengineer their way of doing business. The *Broadband Commission for Digital Development* has documented many cases where the use of broadband technologies has accelerated progress towards achieving the MDGs, especially in healthcare, education and agriculture (see Table below).

**Table X: Broadband ICTs and the MDGs (source: The State of Broadband 2012 Report, available from [www.broadbandcommission.org](http://www.broadbandcommission.org))**

MDG	Example
<p><b>1. End Poverty &amp; Hunger</b></p> 	<p>A growing body of evidence suggests that broadband can boost GDP and income, helping combat poverty and hunger. Cross-country regression work by the World Bank suggests that a 10% increase in broadband penetration could boost GDP by 1.38% in low- and middle-income countries. Country case studies suggest a strong impact of fixed and/or mobile broadband in individual countries, depending on their economic structure – for example, in Panama and the Philippines (see Annex 1).</p>
<p><b>2. Universal Education</b></p> 	<p>Governments and NGOs are providing schools with PCs to foster a sound primary education<sup>[i]</sup>. In Senegal, a survey found 27.8% of school pupils reported they had acquired better knowledge, and 6.5% understood lessons better with content from ICTs<sup>[ii]</sup>. High-quality electronic content curricula can improve educational outcomes<sup>[iii]</sup>. Several countries (e.g. Portugal, Uruguay) have launched programmes to provide students and teachers with laptops as a basic tool for improved education. The Jokko initiative is a m-education program building literacy skills mainly for women and girls through SMS in Senegal.</p>

MDG	Example
<p data-bbox="237 226 354 254"><b>3. Gender</b></p> <p data-bbox="237 365 342 392">Equality</p> 	<p data-bbox="589 226 1521 443">In India, the Azim Premji Foundation works using computers as an inducement to keep children, particularly girls, in schools<sup>[iv]</sup>, whom they find have 20% lower literacy<sup>[v]</sup>. Various studies have reported that men and women use ICTs differently, e.g. in Senegal, women use ICTs to access information while men prefer communication with friends and family members<sup>[vi]</sup>. For mobile telephony, GSMA has estimated that closing the mobile gender gap would increase revenues for mobile operators by US\$ 13 billion (Chapter 5)<sup>[vii]</sup>.</p>
<p data-bbox="237 554 415 581"><b>4. Child Health</b></p> 	<p data-bbox="589 443 1521 659">ChildCount+ is a community health reporting and alerts platform aimed at empowering communities to improve child survival and maternal health<sup>[viii]</sup>. It helps community health extension workers register children under five to monitor their health status, including screening for malnutrition every 90 days, as well as monitoring immunizations, malaria, diarrhea and pneumonia<sup>[ix]</sup>. It integrates with existing health information management systems to help experts analyze data on child health more rapidly to improve treatment.</p>
<p data-bbox="237 659 370 686"><b>5. Maternal health</b></p> 	<p data-bbox="589 659 1521 875">ChildCount+ has added support for maternal health by registering all pregnant mothers and providing support for antenatal care, as well as the launch of a software module in Ghana, August 2011, aspiring to reduce mother-to-child transmission of HIV<sup>[x]</sup>. Hospitals connected via broadband networks are also enabling remote diagnosis and support for maternal health. WE CARE Solar in Nigeria provides healthcare workers and midwives with mobile phones and reliable lighting using solar electricity to facilitate safer deliveries.</p>
<p data-bbox="237 884 386 911"><b>6. HIV/AIDS</b></p> 	<p data-bbox="589 884 1521 1163">Bozza is an online platform which shares content (music, video, poetry etc.) from across Africa. Currently operational in South Africa, Nigeria, Kenya and Tanzania, this app uses data-intensive mobile services to raise awareness about AIDS and condom use and create job opportunities for unemployed individuals<sup>[xi]</sup>. In South Africa, the Praekelt Foundation uses an open source SMS TxtAlert system based on electronic health records to remind HIV patients about appointments and track which patients miss them or ART medication pick-ups. However, the Praekelt Foundation has faced challenges in expanding the project outside Johannesburg to clinics without digitized electronic databases<sup>[xii]</sup>.</p>
<p data-bbox="237 1274 423 1302"><b>7. Environment</b></p> 	<p data-bbox="589 1163 1521 1379">Smart grids can significantly reduce energy consumption through improved heating, cooling and monitoring technologies<sup>[xiii]</sup>. Broadband can reduce energy and water consumption through a range of technologies such as smart transportation and logistics, smart grids and meters, smart buildings, use of video conferencing and dematerialization. Smart use of ICTs can reduce greenhouse gas (GHG) emissions by up to 25%<sup>[xiv]</sup>. Mobile technology alone could lower GHGs by 2% by 2020<sup>[xv]</sup>.</p>
<p data-bbox="237 1388 415 1415"><b>8. Partnership</b></p> 	<p data-bbox="589 1388 1521 1570">The benefits of new technologies, especially ICTs, should be made available in cooperation with the private sector<sup>[xvi]</sup>. In conjunction with public sector policy leadership, the private sector has driven expansion in the markets for fixed and mobile broadband. The market for mobile broadband has been driven by competition and private sector investment in many countries.</p>

B. Integrating STI and sustainable development

a. Integrating STI to support the Sustainable Development Goals (SDGs)

- b. Focus on new and/or priority challenges (clean energy, water technologies, technology for food security, non-communicable diseases)

There are many documented cases of the improvements in crop yields achieved and promoted by the use of broadband and e-agriculture. Innovation in online tools for inventory and supply chain management accessible through broadband are helping bring relief to deprived populations. The use of broadband for remote diagnosis and health information management systems is enabling health systems to achieve step-level improvements in efficiency for the prevention, treatment and management of outbreaks of disease and epidemics. Above all, the greater awareness, education and information brought about by broadband are helping people everywhere make more informed choices about their lives and communities.

- C. Improving the application of STI for the post-2015 development agenda
  - D. Strengthening multi-stakeholder collaboration and building partnerships
    - a. Private sector
    - b. Public-private partnerships (especially those supporting transfer of technology and know-how as well as adaption and dissemination of tech)
- IV. Shaping the course of development: the potential of culture (Leader: UNESCO / Contributors: ITC, WIPO)
- A. Filling the MDGs Gap
    - a. Mainstreaming culture to support the achievement of the MDGs
  - B. Integrating culture and sustainable development
    - a. Integrating culture to support the Sustainable Development Goals
    - b. Public-private partnerships (especially those supporting transfer of technology and know-how as well as adaption and dissemination of tech)
  - C. Incorporating culture into the post-2015 development agenda
  - D. Strengthening multi-stakeholder collaboration and building partnerships
    - a. Private sector
    - b. Public-private partnerships
- V. An enabling environment for transformative change in society towards sustainable development through STI and culture (Co-leader: Division of Sustainable Development (DESA) and UNESCO / Contributors: UNIDO, WIPO)
- A. National level

- a. Improved coordination among multiple actors providing technical advice and assistance
- B. Regional Level
  - a. Regional technology markets
  - b. South-South cooperation, especially on technology transfer
- C. International level
  - a. Improving measurement of STI, including through WIPO Global Innovation Index
- VI. Toward coherent policy and action frameworks: the role of the ECOSOC System (Leader: Office for ECOSOC Support and Coordination (DESA))
- VII. Recommendations

[i] Jyotsna Puri et al. (n.d.) *A Study of Connectivity in Millennium Villages in Africa*.

[http://www.mobileactive.org/files/file\\_uploads/ICTD2010%20Puri%20et%20al.pdf](http://www.mobileactive.org/files/file_uploads/ICTD2010%20Puri%20et%20al.pdf)

[ii] P.34, Thioune, R., *Information and communication technologies for development in Africa*. Ottawa: International Development Research Centre. Council for the Development of Social Science Research in Africa, 2003, available at: [http://omec.uab.cat/Documentos/TIC\\_desenvolupament/0002.pdf](http://omec.uab.cat/Documentos/TIC_desenvolupament/0002.pdf)

[iii] Hugh G. Jagger, "Education Empowered by ICT - The World's Best Investment?", p.263, in *Harnessing the potential of ICT for education a multi-stakeholder approach ; proceedings from the Dublin Global Forum of the United Nations ICT Task Force*. 2005, available at: [http://www.tcpdpcast.org/briefings/ict4education\\_ebook.pdf](http://www.tcpdpcast.org/briefings/ict4education_ebook.pdf)

[iv] M. Madhavan Nambiar, "ICT for Education: The Experience of India", P. 20, in *Harnessing the potential of ICT for education a multi-stakeholder approach ; proceedings from the Dublin Global Forum of the United Nations ICT Task Force*. 2005, available at: [http://www.tcpdpcast.org/briefings/ict4education\\_ebook.pdf](http://www.tcpdpcast.org/briefings/ict4education_ebook.pdf)

[v] Azim Premji Foundation, vision statement, available at: [http://www.azimpremjifoundation.org/Our\\_Vision](http://www.azimpremjifoundation.org/Our_Vision)

[vi] P.34, Thioune, R., *Information and communication technologies for development in Africa*. Ottawa: International Development Research Centre. Council for the Development of Social Science Research in Africa, 2003, available at: [http://omec.uab.cat/Documentos/TIC\\_desenvolupament/0002.pdf](http://omec.uab.cat/Documentos/TIC_desenvolupament/0002.pdf)

[vii] GSM Association. 2010. *Women & Mobile: A Global Opportunity*. <http://www.vitalwaveconsulting.com/pdf/Women-Mobile.pdf>

[viii] <http://www.childcount.org/about/>

[ix] "Scaling up Mobile Health: Elements Necessary for the Successful Scale up of mHealth in Developing Countries", White Paper for Advanced Development for Africa, prepared by Actevis Consulting Group, authored by Jeannine Lemaire.

[x] <http://www.childcount.org/about/>

[xi] <http://bozza.mobi/>

[xii] "Scaling up Mobile Health: Elements Necessary for the Successful Scale up of mHealth in Developing Countries", White Paper for Advanced Development for Africa, prepared by Actevis Consulting Group, authored by Jeannine Lemaire.

[xiii] "Smart 2020: Enabling the low carbon economy in the information age" The Climate Group on behalf of the Global eSustainability Initiative (GeSI), 2008, available at: <http://www.gesi.org/LinkClick.aspx?fileticket=tbp5WRTHUoY%3d&tabid=60>

[xiv] "The Broadband Bridge: Linking ICT with Climate Action for a Low-Carbon Economy", a report by the Broadband Commission for Digital Development, available at <http://www.broadbandcommission.org>

[xv] GSMA. 2009. *Mobile's Green Manifesto*. November. <http://www.gsmworld.com/our-work/mobile-planet/mobile-environment/green-manifesto.htm>.

[xvi] MDG Target 8F, as quoted at: <http://www.un.org/millenniumgoals/global.shtml>